



## **Wisconsin natural resources. Vol. 6, No. 3 May-June 1982**

Madison, Wisconsin: Wisconsin Department of Natural Resources,  
May-June 1982

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# Wisconsin

## NATURAL RESOURCES

May-June 1982 • Volume 6, Number 3

\$1.50

**Special  
Supplement:**



**YO**  
and nonpoint  
source pollution



# Parasite bird

PAUL J. PEETERS, DNR Fish Manager, Two Rivers

Every cowbird starts out as a foster child. It is abandoned by its mother as an egg in the nest of another species. The brown-headed cowbird is Wisconsin's only complete brood parasite. It is known to parasitize over 250 species of birds but prefers the nests of sparrows, warblers and vireos. Found throughout the United States, the cowbird is common in Wisconsin.

The female is able to synchronize herself to the nesting cycle of other songbirds. She lays a single, lightly-speckled egg in the nests of four or five different birds. Sometimes she even removes one of the host's eggs.

Here the nestling cowbird is already bigger than both its foster parent, the redstart perched nearby, and the redstart baby. With a shorter incubation period than the host, the young cowbird gets a head start. It grows quickly and dwarfs the nestmates. The young cowbird demands the "lion's share" of the food and is often the only one to successfully fledge because it has crowded or pushed other young from the nest. The redstart is a common Wisconsin warbler and frequent cowbird foster parent.

Dastardly and subversive by human standards, brood parasitism is, however, an efficient and successful way of life for the cowbird. Worldwide, brood parasitism is practiced by numerous species in five families of birds. Best known is the cuckoo. Wood ducks and redheads, two Wisconsin waterfowl species, exhibit partial brood parasitism in that they lay some of their eggs in other waterfowl nests.

Photo by Paul Peeters

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If you do the right thing, one might move in and brighten your day.



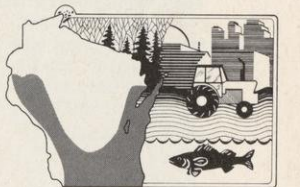
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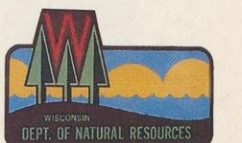
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Wisconsin Natural Resources Magazine (USPS 346-250) is published bi-monthly by the Wisconsin Department of Natural Resources, 101 S. Webster St., Madison, WI 53702. Subscription rates are: \$6.97 for one year, \$11.97 for two years, \$15.97 for three years. Second class postage paid at Madison, WI. POSTMASTER: Send address changes to: Wisconsin Natural Resources, P.O. Box 7191 Madison, WI 53707.





# Building an umbrella for acid rain



Round Lake in Douglas County is typical of 700 similar lakes in Wisconsin susceptible to change by acid rain. Groundwater, soil, vegetation and forest litter studies here will detail the rate at which acid rain leaches out nutrients and uses up buffering agents. Results can be applied to all 700 lakes.

Photo by Jack Mason

**A unique fact finding research campaign is underway in Wisconsin with state agencies, federal agencies and utilities all cooperating to find answers.**

*THOMAS B. SHEFFY DNR Acid Deposition Coordinator*

During the last two years or so, Wisconsin has been inundated by a blizzard of articles, broadcasts, conferences and campaigns on "acid rain". The gist of the blitz has ranged from chilling stories of pristine lakes changing into fishless, fuming caldrons overnight, to indignant utility rebuttals which label acid rain a hoax. What should you believe? Is it as bad as they say? Probably not! Is anything being done? Yes!

Two years ago June, DNR compiled whatever information was available on acid rain in the state. It was scanty, but revealed that much of northern Wisconsin is susceptible because of its softwater lakes, poorly buffered soils and granite bedrock. Alarming, ever since DNR began monitoring in 1979, precipitation records in northern Wisconsin showed a pH of about 4.5, roughly 10 times more acid than normal. These facts were justification enough for DNR to go to the Public Service Commission (PSC) and the state Legislature for some kind of action.

Some feel that because coal-fired utility boilers produce more than half the sulfur dioxide and nitrogen oxides that cause acid rain, utilities should be forced to reduce emissions immediately. Others, including the utilities of course,



feel differently. Recognizing the tremendous gaps in what we know about acid rain, where it comes from and its effects on susceptible lakes, the Legislature and PSC have opted for more facts through additional research. They realize that, based on present knowledge, if scrubbers were ordered for all Wisconsin utility boilers right now, there might be little or no effect in northern Wisconsin. But the cost would be \$450 million! On the other hand, the PSC reasoned that Wisconsin utilities cause at least a portion of the problem, and ordered them to spend about \$500,000 to help with a cooperative, statewide acid rain research effort.

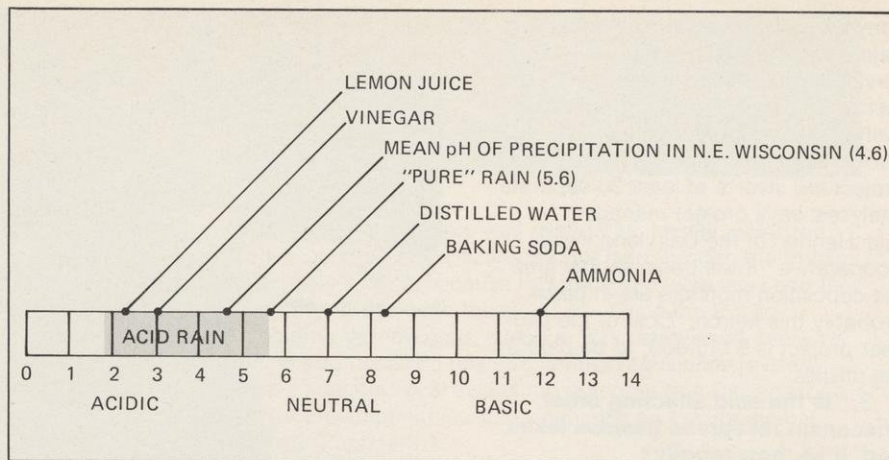
In early 1981, DNR, the PSC and eight Wisconsin utilities formed a joint committee and began planning and designing the research. Negotiations on what to study, how much to spend and who should do it proved difficult, exhaustive and time-consuming — not unusual with this type of consensus approach. Project coordinators finally trimmed the scope of the study to four crucial questions, and designed six research projects to answer them.

**1. How fast is the acid buildup happening, where and how much?** Although we know it occurs in northern Wisconsin, no one knows about other parts of the state. To find out, the joint committee hired a firm to set up and operate three rainfall collectors for two years. The samplers will be located in a north-south line across the state — one each in Douglas, Menominee and Walworth Counties. Every time it rains or snows, samples will be collected and analyzed. According to project manager John Flickinger of the Wisconsin Power and Light Company, information gleaned from the samples will help quantify and characterize Wisconsin's pattern of acid deposition plus help find out where it comes from and predict future trends. The network began operating in February. Cost to Wisconsin utilities: \$215,000.

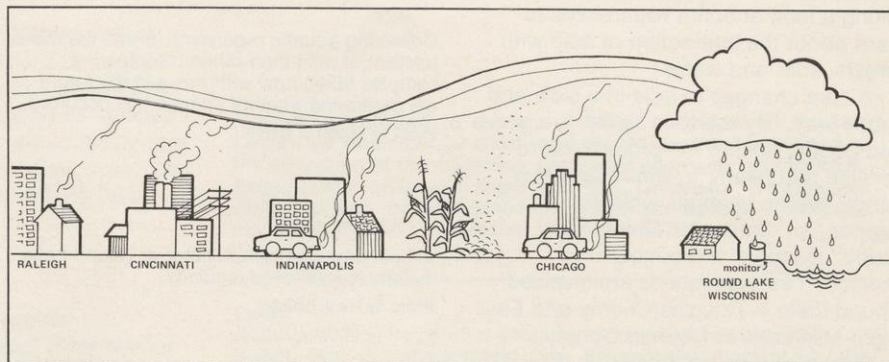
**2. How much acid rain originates in-state and how much is due to long-range transport from surrounding states?** It is unlikely that Wisconsin emissions alone account for total acid deposits here, so the origin of all polluted air masses which bring it must be documented.

Some mention lake liming as a solution but this merely treats a symptom. Finding the source and then reducing the pollutants there is the real answer. To get at the source research will also include an "Atmospheric Trajectory Study" which can backtrack an acid rain-storm to its point of origin.

When low-pH precipitation falls, researchers will try to find out where the air that produced the acid came from.



The lower the number, the higher the acid content. Seven is neutral.



Meteorologists will backtrack weather patterns to find out where Wisconsin's acid rain originates.

Drawing by Georgine Price



The trough in this research equipment at Round Lake collects rain as it falls through leaves. First results show that hardwoods buffer acid while conifers add to it.

Photo by Al Prey



They will conduct a so-called "back trajectory analysis." National weather service data, satellite imagery and radar technology will be used. The weather system and polluted air mass will be back-tracked for 48 to 72 hours. The project will involve at least 30 separate analyses, says project manager Eric Hennen of the Dairyland Power Cooperative. It will begin shortly after the deposition monitors are in place, probably this March. Cost of the two-year project is \$110,000, to be paid by the utilities.

### 3. Is the acid affecting other Wisconsin resources besides lakes, and, if so, how rapidly?

Although preliminary geological, chemical and hydrological data show general susceptibility, the *rate* at which acid deposition happens needs documentation. Will all natural resources be affected? How? To get answers means taking a look at entire watersheds to learn about the interaction of acid with forests, soils and water.

A lake changes to acid in a slow and subtle way. By the time its fish are gone and people notice, the process is irreversible and nearly finished. To get a handle on the changes while they happen, an "Intensive Watershed Study" is part of the cooperative project. Two watersheds are involved: Round Lake in Douglas County and East Eight-Mile Lake in Bayfield County. Researchers want to determine if susceptible lakes in Wisconsin are already on the verge of acidification or if present levels are tolerable.

DNR, the US Geological Survey, the Wisconsin Geological Survey, the University of Wisconsin and the Electric Power Research Institute will all participate. Tom Wirth in DNR's Bureau of Research is the project manager. He says Round Lake was selected because it has all the characteristics of susceptibility to acid. It is a small seepage lake with a pH of about 5.5 and contains very few of the carbonate minerals needed to neutralize acids. East Eight-Mile Lake, on the other hand, is considered to be moderately susceptible with a pH of about 6.6 and a slightly higher buffering ability. "Our choice of study sites should allow us to make a meaningful comparison between two different lake types," Wirth said.

Watershed researchers will study how rainfall interacts with each component of the watershed. Professor Jim Bockheim, UW Soils Department, will monitor changes in precipitation chemistry (pH) as the rain reacts with vegetation, forest litter and soils. Dennis Wentz of the USGS will examine the water sources and groundwater that interact with the two lakes. DNR researchers Jack Mason and Paul Garrison will collect data on lake



Collecting aquatic organisms. Some are more tolerant of acid than others. Comparing samples taken now with those in the future will determine whether change has occurred.

Photo by Robert E. Martini

A bulk precipitation collector at Round Lake. Acidity is measured regularly.

Photo by Frank Boucher



water quality and aquatic life. Forest researcher Al Prey of DNR will evaluate pathological effects on foliage.

Their data will help calculate the rate at which nutrients are being leached from the watershed, and the rate at which buffering agents are being used up in neutralizing acid rain. The ultimate goal would be to predict the long-term effects acid rain may have on other northern Wisconsin lakes and forests.

Sampling in the two watersheds began in May, 1981. It is a 2-1/2 year project and will cost about \$764,000. DNR contributes \$100,000, Wisconsin Utilities \$123,000, USGS \$218,000, the UW Soils Department \$45,000, State Geological Survey \$4,000 and the National Electric Power Research Institute \$274,000. The investment is large, but the information critical.

### 4. What and where are the significant sources of sulfur dioxide and nitrogen oxide in Wisconsin and in surrounding states?

A fourth project will answer these questions. It will also quantify the emissions. Both natural and manmade sources will be located. Projections of future emissions will also be made. Once the inventory is complete and relative contributions from various sources known, reduction strategies will be worked out. Scheduled for completion in June 1983, the project will be conducted by Paul Koziar and Eric Mosher of DNR's Bureau of Air Management. Wisconsin Utilities will contribute \$14,500 toward this \$20,000 cost with DNR making up the difference.

Special data management and quality control systems will be set up for the study. The first consists of a computer





Researchers pull a groundwater sample at Clara Lake in Lincoln County.

Photo by Dave Kunelius

Scientists tried spreading lime at Little Cub Lake in Forest County hoping to reduce acidity to levels that would support trout. The experiment failed. At first, alkalinity readings soared, then spring runoff restored the lake to its original condition.

Photo by Joe Eilers



file. Quality control will be maintained by a third party reviewer and analyst who will independently duplicate many of the studies.

The entire Cooperative Acid Rain Research Program is a national first. It is unusual because two regulatory agencies will actually work side-by-side along with the utilities they regulate. Usually, industry and regulatory agencies come at each other as adversaries. In this instance they have come together for mutual benefit.

In answer to suspicious critics, utility acid rain spokesman Richard Bratcher says, "Work directed by utilities will be systematically monitored by DNR and the PSC with sufficient checks and balances to bridge any credibility gap. No one will be able to impugn the results simply because utilities did the

research."

In addition to the cooperative program, acid rain studies continue in DNR's North Central District. It was in 1979 at the Rhinelander headquarters that Wisconsin was first alerted to the potential problem. Supervised by Bob Martini, the current study is financed by a \$100,000 Environmental Protection Agency grant. Hopefully, this will be renewed annually through 1985. According to Martini the project will focus on five main areas. It will examine the chemical changes in northern Wisconsin lakes by comparing the pH and other chemical values measured in the 1930's to the same items today. It will evaluate fish populations, zooplankton and other aquatic organisms in seepage lakes to find out whether they are stressed. Precipitation

monitoring at Rhinelander and Trout Lake will continue along with analysis of snow cores from about 20 locations. A headwater stream will be monitored before, during, and after spring snowmelt to determine if the system is affected by the large slug of acidic spring runoff that occurs each year. And finally, there is an intensive watershed study at Vandercook and Clara lakes similar to the work being done at Round and East Eight-Mile lakes. By comparing watersheds in north central and northwestern Wisconsin, researchers will be able to determine whether there are localized differences in susceptibility.

Although Wisconsin's program to control acid rain is substantial, it is dwarfed at the federal level. In 1980, Congress passed the Acid Precipitation Act which established a US Interagency Task Force on the problem.

The dozen federal agencies involved will examine the causes, effects and possible control of acid rain over a 10 year period. Federal acid rain research funds have been raised from \$10 million this fiscal year to about \$18 million next. Nearly \$1 million will be spent on acid rain research in the Great Lakes region, much of it involving Wisconsin. In Washington, Congress has been drenched with acid rain bills recently. One proposes an immediate 50% reduction in emission levels in the eastern half of the country. Another calls for a "cap" on emissions with no increase over the present until more is known about cause and effect. The same bill allows one state to petition another to reduce emissions if environmental damage is demonstrated. A third bill would speed up federal studies and complete them in five years rather than 10.

The Wisconsin DNR endorses a proposed cap on emissions to prevent the problem from worsening. But DNR told the Committee on Environment and Public Works it wants any ordered reduction in emissions to be based on research. Until studies are completed, the actual amount of reduction necessary to solve the problem is an uncertain quantity. DNR wants to make sure that the money spent will do the job. This does not preclude control of emissions wherever available data warrant such action.

All in all, right now the attack on acid rain at the federal, state and utility level amounts to a massive fact finding campaign. The answer to the question "Is anybody doing anything?" is a loud and clear — Yes! As soon as comprehensive research lets us understand the complex nature of the beast, measures required to control it will be enacted. This should be soon. Wisconsin lakes will be saved.





# Fish and the Red Cliff Chippewa



The Chippewa have been fishing Lake Superior for more than 300 years. Historically, they sold their catch to early French and English fur traders.

Woodcut courtesy of the Sigurd Olson Environmental Institute.

**Wisconsin scored another first recently when a courthouse problem that might have dragged on for many years was settled at the negotiation table. Both Indians and DNR label it "tentative," but a precedent has been set.**

*KRIS VISSER, DNR Legislative Liaison, Madison*

Wednesday, 10 a.m., Bayfield. Howard Bellman leads a group of Chippewa Indians, fish managers, lawyers and DNR wardens into a conference room at the headquarters of the Apostle Islands National Lakeshore.

Wednesday, 2 p.m., Bayfield. DNR conservation wardens climb aboard their 32 foot patrol boat and head into Chequamegon Bay to check for illegal fishing.

Wednesday, 3 p.m., Bayfield. Danny Hahn, operator of DNR's Bayfield hatchery, carries a bucket of trout food pellets along a row of concrete tanks. In each 13,000 gallon tank are about 50,000 small lake trout. Hahn scatters the pellets into the tank and watches the fish churn the waters as they take the food.

Somehow the Lake Superior fishery seems to involve more lawyers and conference rooms, more laboratories, biologists and wardens than it does fishermen and boats.

The seven DNR wardens whose duties include law enforcement along Wisconsin's 325-mile Lake Superior shoreline, spend many days every year on the water, in fishing boats and on piers checking sport and commercial catches.

Every year the Bayfield hatchery feeds 40,000 pounds of special trout food pellets to the 250,000 lake trout the state stocks in Lake Superior. Federal hatcheries stock another 250,000.

Howard Bellman is a labor mediator who spends part time on environmental disputes. Since fall of 1979, he has worked with the DNR and the Red Cliff Band of Lake Superior Chippewas to come up with a fish management agreement consistent with Chippewa fishing rights under an 1854 treaty. Bellman calls it "one of the most interesting cases I've ever had." And one of the most difficult.

There are three groups with a vital interest in the Lake Superior fishery: Indians determined to assert their treaty rights; the 21 state-licensed non-Indian commercial fishermen, worried about the effect of DNR regulations and of Indian fishing operations; and sport anglers who want large areas of the lake closed to commercial fishing to give them a better chance at trophy trout. DNR's job is to manage the lake so there are enough fish and everyone gets a fair crack at them.

Whitefish and lake trout commercial catches, worth \$500,000 a year, are the staple of the Lake Superior fishery. Whitefish are caught with gill nets and pound nets. A gill net looks something like a long, wide tennis net. A strand of nylon mesh, it sits underwater held steady by weights and floats. The gills of fish trying to swim through become entangled and the fish usually die. A modern boat can put as much as 20,000 feet of gill net in the water at one time.

A pound net is attached to the lake bottom on poles. Fish are guided along

a lead net, funneled into a large enclosed area called a pot, and trapped alive at the end of the net. Live capture allows illegal fish to be released unharmed.

Lake trout are usually caught in gill nets because they live in deeper water than whitefish, so pound nets, which require shallow water, catch few lake trout. But the habitat of the two species overlaps, so anyone fishing for whitefish is likely to catch lake trout as well.

As an additional complication, there is really no open season for commercial fishing of lake trout. Trout are what DNR calls the "incidental catch" because nets set to catch whitefish can't avoid taking trout. No one actually fishes for the trout. Whitefish reproduce in the lake with no help from hatcheries, though lately, evidence shows whitefish populations are in trouble. There are no limits on the whitefish catch, except for a minimum size and protection during spawning from early October to the end of November.

Lake trout, on the other hand, have only a small reproducing population in the lake. DNR wants to reduce reliance on stocking by reestablishing a large naturally reproducing population. That requires protecting lake trout from overkill, which may mean limiting someone's whitefish catch because he's already caught too many trout in his whitefish nets and so has to quit fishing for the season.

George King, head of DNR's Lake Superior management program, notes that a trout's chances of living to reproduce are not good. Less than one in 20 stocked trout live to maturity, and only about one in 1,000 of those hatched in the lake do. DNR's goal is to



improve those odds. King says, "We're controlling lampreys and other natural predators as well as we can. Commercial fishing methods are very efficient. They could destroy the trout population. It's necessary to limit the commercial trout catch if we expect them to survive and reproduce."

Under a 1967 Wisconsin law, DNR may limit the number of commercial fishing operations on Lake Superior, as well as catch size, type of gear and seasons. When the law passed, 44 commercial fishermen were operating. Now there are 21, but the operations are bigger and there are as many fishing boats on the lake today as before the law passed.

The 1967 law meant that the Chippewas, with a history of more than 300 years of fishing the lake, could be excluded except for tribal members with commercial licenses.

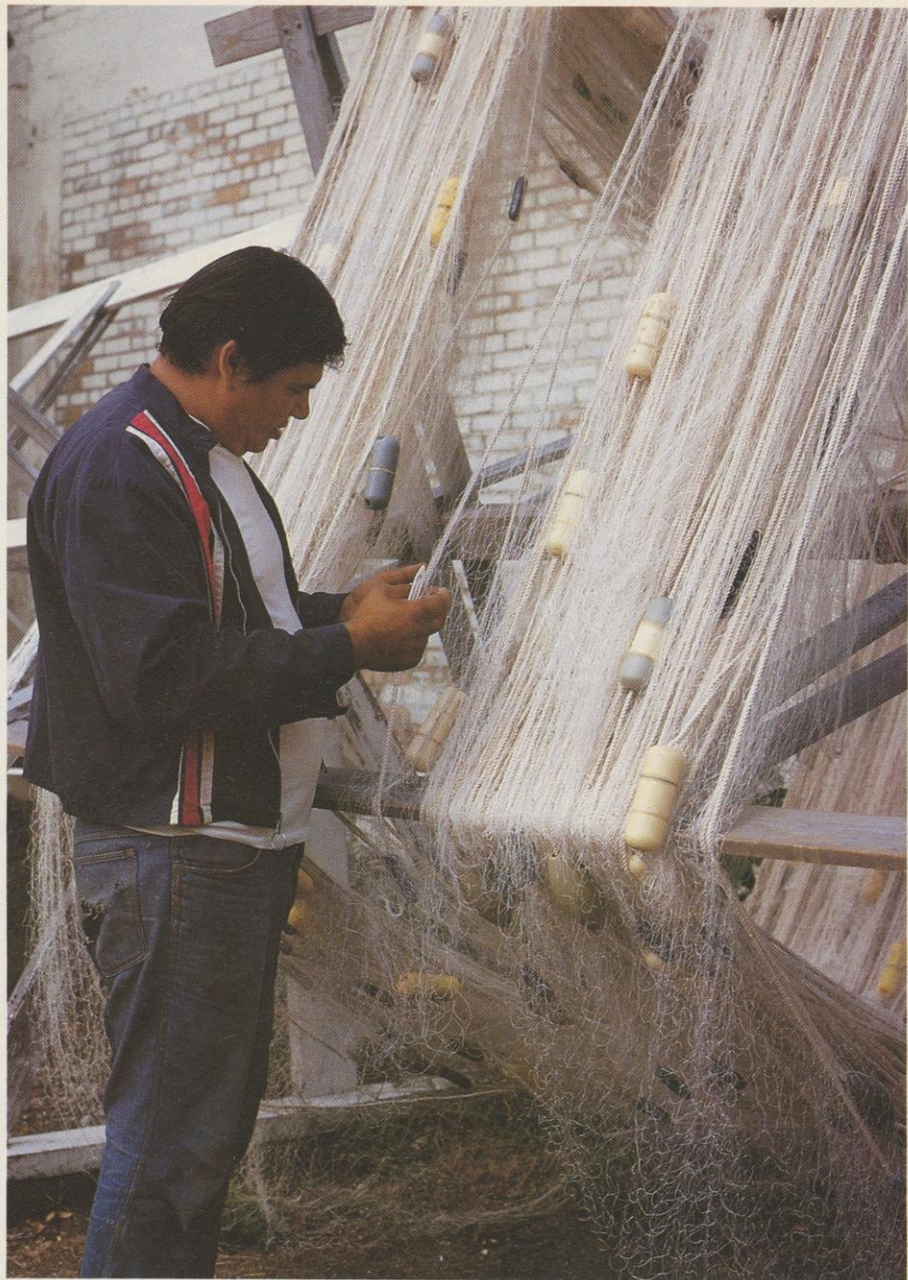
Dick Gurnoe and a few friends from the Red Cliff Band decided to test the state's power to regulate Indian fishing. Gurnoe is now a successful commercial fisherman with a 40 foot boat. He said DNR wardens knew the Indians were going fishing. "We told everyone, so they'd have to come and arrest us. We wanted to test our rights."

The test came in September, 1969. Using a couple of leaky rowboats and a few hundred feet of discarded net, because they knew they'd be arrested and the gear confiscated, Gurnoe and friends set their nets. As expected, they were promptly arrested. They had one fish (a sucker) in the net. Gurnoe recalls that the net was so full of holes they were lucky to get any fish, and the boats so rickety one sank on the way back to shore.

Dick Gurnoe's tribe didn't always live on the south shore of Lake Superior. They came from the east, perhaps near the mouth of the St. Lawrence River. In the late 1500's, the Ojibwas (Chippewa is another pronunciation of the word) were one of several tribes that began a slow migration west, probably searching for unoccupied lands. Within a hundred years, the tribes had settled the area surrounding lakes Huron, Michigan and Superior.

The Wisconsin Chippewas first encountered Europeans when French missionaries and fur traders founded the La Pointe trading post on Madeline Island in Chequamegon Bay.

In those days the tribe survived on fishing, hunting, harvesting wild rice and berries, making maple sugar and planting a few crops such as corn. The tribe was divided into separate bands that had little contact with each other. Each band was composed of several clans. A clan, or part of a clan, had a territory through which it moved during



Indian commercial fisherman Cecil Peterson mends a gill net. An unprecedented out-of-court settlement in Wisconsin protects Red Cliff Indian treaty rights and allows their commercial fishermen to take 100,000 pounds of lake trout per year from Lake Superior.

Photo by Staber Reese.

the year — hunting and fishing grounds in spring and fall, a place to plant crops in summer, a winter camp.

Fish, smoked or fresh, was a diet staple. The Chippewas' birch bark canoes were capable of navigating the shore of Lake Superior. Using bark fiber and nettle twine gill nets about twice the size of a modern tennis net, they fished Chequamegon Bay and the waters of the Apostle Islands. They also built weirs across rivers to catch fish during spawning runs. In the winter they speared fish through the ice.

Sturgeon, northern pike, trout, whitefish and herring were all part of the Indian diet. Early traders and missionaries wrote of "sturgeons of vast bigness,

and Pycks seven feet long." They noted that "A single fisherman will catch in one night 20 large sturgeon, or 150 whitefish, or 800 herring in one net."

The coming of the French caused a profound change in Chippewa society. Indians became dependent on the fur trade for metal knives and tools, blankets and other necessities. They gave up traditional crafts and hunting to concentrate on trapping and settled in permanent villages near trading posts. This pattern continued after the French lost their trading posts and fur business to the English in the French and Indian War.

From the beginning of white contact, the Chippewa sold or bartered their





A modern boat can put 20,000 feet of gill net in the water at one time. DNR limits the number of non-Indian commercial operators to 21.

Watercolor "Working on the nets" by Artist Phil Austin A.W.S., Rt. 1, Ellison Bay, WI 54210

catch to traders in La Pointe, which became a fishing center where fish were salted, packed in barrels and shipped east and south.

After American independence, federal Indian policy was to "buy" Indian land through treaties and move the tribes west when whites wanted the land. The Wisconsin Chippewas signed three treaties ceding lands to the federal government. Those signed in 1837 and 1842 promised 20 annual payments to the tribe as well as the service of blacksmiths, in return for which the Indians promised to move west when ordered. In 1850, President Zachary Taylor told the tribe to move, but tribal leaders took a scouting trip to their intended destination in Minnesota, decided the new land wouldn't support their lifestyle and refused to budge. In 1854, the Wisconsin Legislature, in response to petitions from residents of the Lake Superior shore, passed a resolution asking Congress and President Franklin Pierce to allow the Chippewas, "a peaceable, quiet, an inoffensive people...that...acquire their living by hunting, fishing, manufacturing maple sugar and agricultural pursuits," to stay

in Wisconsin. That resolution triggered new negotiations with the tribe.

In September, 1854, the La Pointe and Ontonagan Chippewa bands signed a treaty ceding more tribal lands and creating Wisconsin reservations "for the use of the Chippewas of Lake Superior." The Lac du Flambeau, Lac Court Oreilles, Bad River and Red Cliff reservations were the result. In return for ceding their last lands to the federal government, the Indians got the usual 20 annual payments, amounting in total to about \$500,000 in money and goods, and the standard blacksmith services.

After the 1854 treaty, the Red Cliff and Bad River Chippewas continued fishing on Lake Superior. The Indian agent in Ashland, in his 1891 report, noted "The waters of the lake yield a bountiful supply of excellent fish and the surplus catch ... find(s) a ready market in the city of Bayfield. In capturing fish, both gill nets and pound nets are employed. The natives own a small fleet of sailboats, and in navigating their little craft they display the confidence and skill of experienced sailors."

Improved fishing methods — bigger boats, better nets and mechanical net

lifters — meant bigger catches. So big that Chequamegon Bay was closed to fishing twice in the 1890's. Conservation officials tried artificial stocking for the first time. They stocked native lake trout, as well as rainbow and brown trout, which are not native, with apparently marginal success.

Through the late 19th and early 20th centuries Indians comprised a small part of the commercial fishing operations on Lake Superior. The issue of Indian treaty rights might never have surfaced had it not been for the now infamous side effect of the opening of the Welland Canal. The canal provided a path around Niagara Falls not only for freighters and ore carriers, but also for the sea lamprey. The lamprey attaches to the side of a fish and sucks blood and other fluid. When it lets go, the fish is often so weak it dies. The lamprey appeared in Lake Superior in 1946 and devastated the lake trout. Female lake trout, which take 9 years to mature, were often killed before they were old enough to spawn. The whitefish population was not as badly hit because whitefish are small when they mature and have a chance to spawn before growing



big enough to interest a lamprey.

In 1951, the entire Lake Superior commercial lake trout catch was 3.1 million pounds. By 1960, it had sunk to 380,000 pounds. By then, a massive international control program was successfully underway using electric weirs to prevent spawning and poisons to kill the young lampreys. Wisconsin began to rebuild the lake trout population.

No one thought to consider Indian treaty fishing rights when the fishery began to come back. But naturally-reproducing lake trout were gone. Chubs and herring populations were low, and sturgeon had been gone for years. The days of unlimited fishing were gone too.

Limiting the number of commercial licenses meant that not every Indian who wanted to could get into the emerging and profitable fishery. Dick Gurnoe had crewed on a fishing boat. He wanted his own boat. He got his friends and a lawyer and went fishing.

The county court in Bayfield and the circuit court both ruled that the 1854 treaty did not reserve the right to fish in Lake Superior. Gurnoe appealed to the Wisconsin Supreme Court.

On January 6, 1972, the supreme court reversed the lower courts and ruled that the Chippewas do have a treaty-protected right to fish in Lake Superior. But the court also ruled that the state can regulate Indian fishing if necessary to protect fish populations.

The DNR-Chippewa negotiations began in 1979, when former DNR Secretary Anthony Earl called in Howard Bellman to help reach an agreement that would end lawsuits and confrontation. Experience in other states showed that confrontation led only to long, drawn-out court fights and, in some cases, to violence. A negotiated agreement would make Wisconsin a leader in dealing with Indian treaty rights.

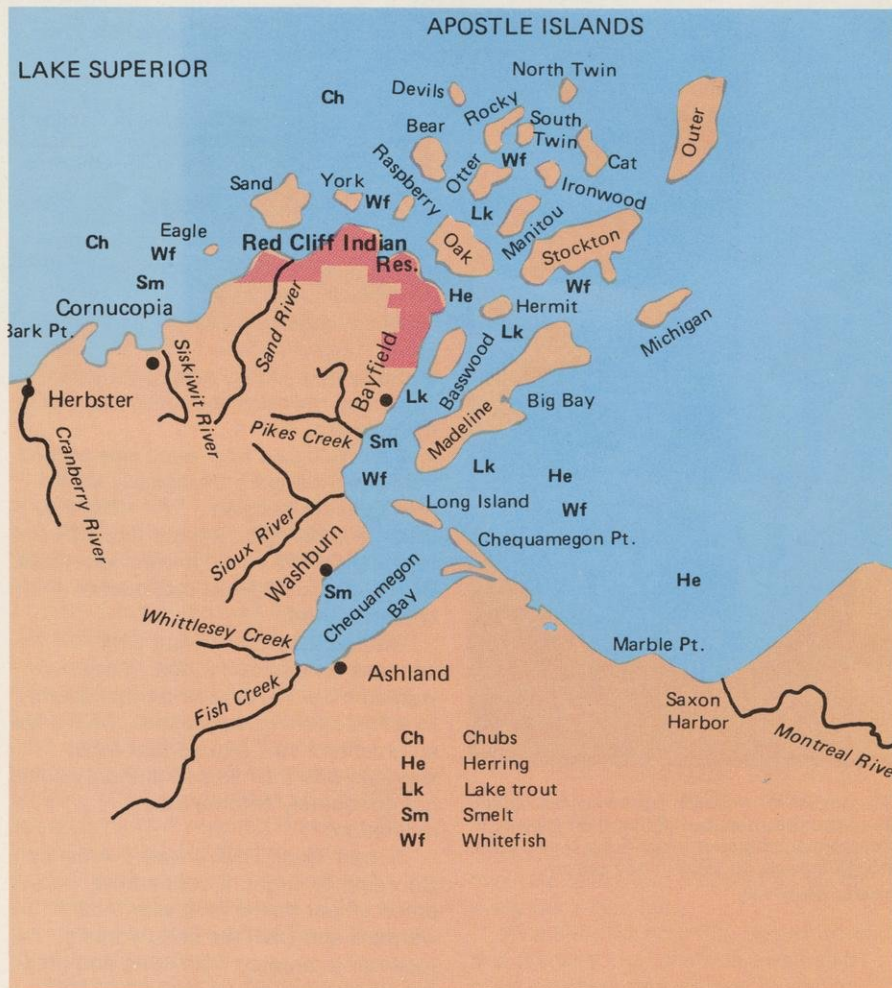
Early negotiations centered around fishing by all tribal members. In June, 1980, the tribe and the DNR signed a subsistence fishing agreement. The agreement regulates small-scale fishing for personal use, as opposed to sale.

Commercial fishing negotiations centered around the issue of how many trout the tribe could take, and how to enforce that limit. The tribe wanted an agreement that would protect their treaty rights, maintain an economically viable fishery and protect fish populations for long-term fish management. DNR wanted an agreement that protects fish populations, is enforceable and provides an adequate catch for both sport and commerce. DNR proposed extensive refuges (no-fishing areas) among the Apostle Islands, with unlimited fishing allowed in season outside the



A 1935 photo of a crew collecting lake trout spawn for the hatchery.

Photo by Eugene Sanborn







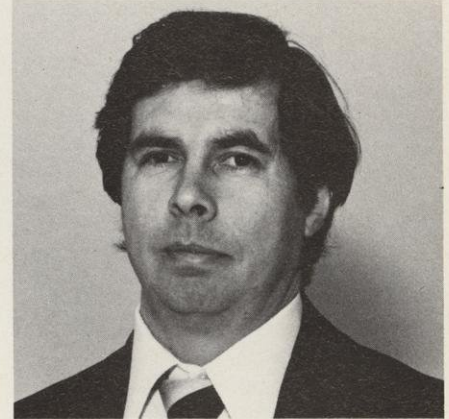
A pond net yields a commercial haul of whitefish. Together with lake trout they're worth about \$500,000 per year to Wisconsin commercial operators on Lake Superior.

Environmental mediator Howard Bellman of the Wisconsin Center for Public Policy helped negotiate the agreement.

DNR Native American Coordinator Robert Deer urged cooperative enforcement of regulations by both tribal and DNR wardens.



Howard Bellman



Robert Deer

fish) for the tribe and 80,000 pounds per year (about 27,000 fish) for non-Indian commercial operators.

The agreement sets out areas where fishing is restricted and areas where fishing is allowed, for both sport and commercial. In an effort to develop a naturally reproducing population, DNR agreed to continue stocking in waters near the Apostle Islands and in the Gull Island fish refuge.

The enforcement agreement gives DNR jurisdiction over non-Indian violators, while the tribal wardens and the tribal court will have jurisdiction over Indians.

While there are still unresolved problems, particularly the accessibility of Saxon Harbor to commercial fishing, the agreement represents a landmark in state-tribe negotiations. No other state has come as far as Wisconsin in reaching a negotiated settlement that recognizes treaty rights, fish management problems and the needs of all users. No other state has been able to avoid prolonged court action, and outbursts of violence.

Both the tribe and DNR officials are confident that they can negotiate a final permanent agreement. As Howard Bellman said after a particularly difficult session, "Whenever I get discouraged, I just remember it took 150 years to get into this situation. Taking a few years to solve the problems isn't really surprising."



Gill nets set for whitefish can't help but catch lake trout too. Because of this DNR allows commercial fishermen a lake trout quota even though there is no official open season.

Photo by George King

refuges. Indians wanted a lake trout quota divided among all user groups — Indian, state licensed commercial and sport anglers—that would guarantee the Indians a large percentage of the catch (their suggestion was 50%) they said a quota system would protect their treaty rights and maintain economic stability in the industry.

Fish biologists from each side agreed they could design a biologically sound management program. Tom Busiahn, the tribe's biologist, agreed the DNR refuge proposal would protect lake trout. DNR biologists agreed that quotas, if enforced, work.

But the tribe didn't want DNR wardens on the reservation. They wanted tribal wardens and tribal courts to enforce fishing regulations. DNR's law enforcement staff argued that tribal wardens with their limited authority could not adequately enforce fishing regulations.

Robert Deer, DNR's Native American Coordinator, urged a cooperative enforcement agreement, with tribal wardens and DNR wardens working together to enforce both state and tribal regulations.

Finally, after two years of negotiation, DNR and the Red Cliff Chippewas signed an interim agreement covering quotas, areas closed to fishing, enforcement and fish stocking. Under the agreement, the commercial harvest of lake trout is set at 100,000 pounds per year (about 33,000



# Catch-all

## Manure spill proves expensive

Greg Matthews,  
Public Information  
Madison



**Dodgeville** — "Manure holding tanks and basins along with feedlot runoff, are rapidly becoming one of the major environmental concerns in farm areas of southern Wisconsin," says "Skip" Cloutier, DNR warden at Dodgeville.

Since the spring of 1981, DNR has brought seven manure spill cases to circuit court in the Iowa/Richland/Sauk County area. One farmer opened a holding pond and allowed about one million gallons of liquid manure to spill out and travel down ditches until it reached the tributary of a smallmouth bass stream.

The manure spill killed fish for several miles down the tributary, but fortunately it was diluted by heavy rains before it reached the creek proper.

The farmer pleaded no contest and paid a \$229 fine plus \$3,500 for fish killed by the incident. He also was ordered to clean up a neighbor's property, which entailed several thousand dollars in heavy equipment work.

"Three others paid from \$400 to \$4,800 for similar offenses," says Cloutier. "And there are still two additional cases pending."

"The concept behind holding tanks and basins is sound but they require a lot of maintenance and obviously a few farmers aren't managing them properly," according to the warden. He said the farmer learned that pulling the plug

isn't the answer to a poorly designed, built or maintained manure pit.

Why do a few farmers dump their manure holding tanks or basins? What prompts them to take such drastic actions?

Farmers who build too small a pit or don't empty it often enough get stuck with a full tank when wet weather hits, says Professor James Petersen, UW-Extension agricultural engineer.

"Farmers who don't plan for wet times may then be caught with a full tank, especially during early spring, when they can't haul manure to the field nor fit anymore in storage," explains Petersen.

Even if a farmer can get into the field, he faces about 150 hours of labor worth approximately \$1,000 of his time.

"So, rather than haul, some open their tanks or let basins spill over to save labor," says Petersen.

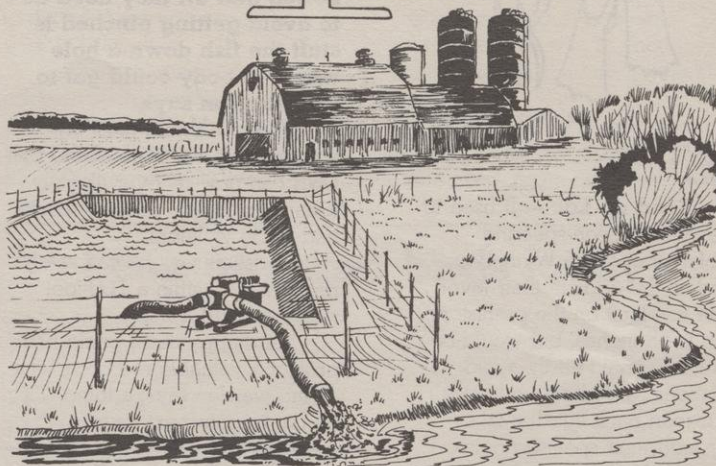
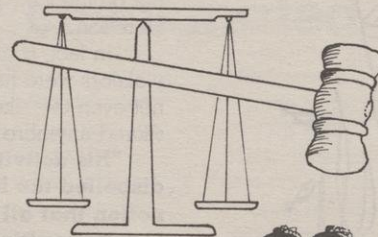
But this kind of "cost saving," besides being illegal, wastes tremendous amounts of valuable nutrients.

**If a farmer with a 50-cow herd allows six month's worth of stored manure to spill into a stream, says Petersen, he loses more than \$1,300 worth of fertilizer.**

Cloutier says farmers should weigh this nutrient loss, potential civil and criminal fines and other costs before they "pull the plug."

"I think they'll find it's not worth it," he says.

For more information on rural and urban erosion and runoff pollution problems, see the special supplement that begins after the next page.



Manure spills and dumpings damage streams and kill fish. Fines and penalties for perpetrators can run to thousands of dollars.

Illustration by Jim McEvoy

## Wardens get trail bikes

**Spooner** — The Wisconsin Chapter of Safari Club International has given DNR wardens five trail bikes — two two-wheelers and three three-wheelers. The gifts are a follow-up on the clubs stated goal "to help conservation efforts by supporting worthwhile projects."

Conservation officers find the bikes to be every bit as much a bona-fide law-enforcement tool as binoculars or a walkie-talkie.

For nearly two years bikes and trikes have served a wide range of purposes. They've been used to look for illegal bear-baiting and to check for out-of-season bow hunting. They've run the Great Lakes shore, patrolling for illegal commercial fish nets and traps. DNR firefighters have employed them to carry water to railroad right-of-

way fires. They've located lost hunters, searched for stranded snowmobilers and dragged illegally-killed wildlife out of the woods.

Many times, the two or three-wheeled bikes can travel where four-wheel drive vehicles cannot. The versatile motorcycles can traverse deep ruts, mud, rocks, logs, swamps, even standing water a foot deep. They can patrol streams, rivers and the slushy ice of late-winter lakes.

Throughout northern Wisconsin, wardens have driven hundreds of miles of backwoods roads that would otherwise be unpatrolled. One Marinette County warden patrolled all the forest dirt roads and trails of an entire township in a single day. In that whole day, he used just over a single gallon of gasoline.



# The diving warden



Illustration by Georgine Price

Greg Matthews,  
Public Information  
Madison

**Fond du Lac** — It used to be that sturgeon-spearer violators on Lake Winnebago had all the odds in their favor. The size limit on the prehistoric fish is 45 inches, but would-be violators could easily avoid citations by stuffing undersize sturgeon back into the lake through their spearing holes.

**"Unless we could retrieve the fish some way through the hole, we couldn't make a case,"** says Tom Harelson, DNR conservation warden in Fond du Lac County.

But no more. Enter John Christian, Dodge County warden and trained scuba diver. Last winter, some violators got quite a shock when he appeared on the scene.

"Two wardens approached one guy who immediately ran into his shack. The wardens heard a splash, went inside and spotted a sturgeon on the bottom about 60 feet away from the hole," remembers Christian.

**Apparently, the suspect was feeling smug, secure in the knowledge that the wardens couldn't retrieve the fish. They tried spearing it, but no luck. Then Christian arrived in an orange diving suit.**

**"He just freaked out,"** Christian says of the suspect.

Christian dove under the ice and emerged with the 40-inch fish, five inches under the minimum size.

Later in the winter he did it again, recovering a 41-inch sturgeon. The diving warden made quite an impact on Lake Winnebago's sturgeon spearers.

"Word of John's dives spread around the lake like wildfire. His presence means a big deterrent out on the ice," points out Harelson.

"In fact, some known violators were heard to say that not even the lake bottom is sacred anymore."

**"His activities have dispelled the long-held notion that all they need do to avoid getting pinched is stuff the fish down a hole where nobody could get to it,"** Harelson says.

Harelson thinks most law-abiding spearers were elated that DNR can now recover illegally speared sturgeon and prosecute bad-apple violators.

Christian says he can safely recover fish within a 100-foot radius around a hole.

"I'm happy that I could help protect a valuable resource," the diving warden says, adding "I'll be back again next year."



Close to one out of every three licensed spearers on Lake Winnebago took sturgeon this year. Photo by Dean Tvedt.

## 3 inches in 25 years

**Oshkosh** — Sturgeon are extremely long-lived fish and the older they get, the slower they grow. But fish biologists were still mildly startled to find that a fish tagged in 1957 and speared this winter had grown only three and one-half inches in the intervening quarter century. Twenty-five years ago the Lake Winnebago sturgeon measured 72 inches — an even six feet long. When speared this year it measured only 75½ inches. Another younger fish, tagged the same year at just over four feet, grew almost 1½ feet, to 66 inches.

**But despite this incredibly slow growth rate, upwards of 20,000 legal-sized**

**sturgeon (45 inches or longer) swim the shallow waters of Lake Winnebago, according to estimates by Dan Folz, DNR fish manager here.**

Last winter, Folz says, spearers took an unusually high total of 2,238 sturgeon. The previous season the take was only 470. The average tallies out at around 720 annually, including the high 1982 figures.

Folz says success this year can be attributed to exceptionally clear water and easy travel conditions on the ice.

The heaviest fish this year weighed 158 pounds. The two longest measured 83 inches each.

## Subscription problems?

### Here's help.

Do you keep getting renewal notices — long after you've paid your bill? Have you moved — but your magazine failed to follow? You've tried to straighten things out — but the computer just won't listen?

Well, help is now only a phone call away. We don't want you to miss a single issue of *Wisconsin Natural Resources*. For subscription problems the computer just won't unbungle, a new toll-free telephone number can help get the facts straight.

The magazine hires a private computer firm to keep track of all subscription records. It's the least-costly way to handle the paperwork.

From now on, when the delivery system develops a serious glitch, you can dial toll-free, **1-800-247-5470**, any weekday from 7 a.m. to 9 p.m. Just dig out your cancelled check, any correspondence and your most-recent copy of the

magazine. Operators will want the full name of the magazine, plus your name, zip code and mailing-label subscription number.

**Please note that the personnel answering the toll-free number are not DNR employees. They cannot answer any other magazine- or DNR-related questions.**

This service is free to you, but not to us — the computer company charges the magazine 95¢ for each call. Obviously, we'd like to keep those bills as low as possible so we can put more of your subscription dollars to work turning out a great magazine. For that reason, we'd appreciate it if you'd mail in changes of address and write us first if you have problems. If that doesn't work, then use the toll-free number. Please allow eight weeks to process your subscription or renewal.

## Air quality phone queries up 400%

**Milwaukee** — Phone inquiries about air quality in the Milwaukee area more than quadrupled last year during the July to October period as compared to 1980, according to DNR's Southeast District. In 1980, 8,298 calls were received. But in 1981 the figure jumped to 33,488.

Ozone alerts, periods of poor air quality, and media reports about them stimulate calls, according to Don Williams, DNR air monitoring technician.

"In an ozone alert," Williams says, "the phone is almost continuously busy, whereas on a good day when the air is clean, we may have only about 50 to 100 calls."

DNR's taped phone message on air quality has a clientele of "repeaters," who for health or other reasons call the number regularly, Williams said. The number is **(414) 257-4461**.

"Catch-all" continued after supplement



# Catch-all

CONTINUED

## Bird populations rise as DDT declines



Bald eagles were among birds hardest hit by DDT.

**Washington, D.C.** — Bald eagles, peregrine falcons, brown pelicans, ospreys and other birds once decimated by DDT are repopulating former haunts as residues of the chemical fade away.

DDT was banned in 1972 when scientists realized it was causing serious reproductive failures in many birds. Most vulnerable were those species which preyed on fish and small mammals exposed to the pesticide.

**Bald eagles were among the most sensitive because they fed on fish. By the late 1960's breeding populations had plummeted. But now bald eagles are making a comeback, returning to once-contaminated homelands.**

The peregrine falcon occupies a food-chain position much like the eagle's and suffered a similar decline. But in the last decade biologists have reintroduced birds in many promising areas, including cities where falcons prey on starlings and pigeons.

**More than twice as sensitive as eagles and peregrines is the endangered**

**brown pelican. Atlantic and Gulf Coast pelicans declined by nearly 80% in otherwise-ideal habitats. Now that the pelicans' fish food-source no longer contains DDT residue, the birds are gaining and number some 5,000 pairs.**

White pelican populations have not yet completely recovered, but their reproductive rate has returned to near normal.

The osprey, or fish hawk, has also staged a comeback. Biologists hope they will reach pre-DDT levels by the end of the century.

**Scientists now know that the real culprit causing reproductive failure was DDE, a chemical formed when DDT starts to disintegrate. DDE causes birds to lay fragile, thin-shelled eggs which break before hatching.**

**Researchers still don't know why similar species with similar habitats vary in sensitivity to DDT. The black duck, for instance, is more sensitive than its green-headed mallard cousin. Terns and skimmers that shared coastal habitats and fish diets with pelicans were apparently unaffected. Herring gulls consumed heavy amounts with little adverse reaction.**

Some migratory birds — including peregrine falcons and black-crowned night herons — continue to absorb DDT in Latin America. The pesticide remains in use there because the law that banned DDT in the US allows companies manufacturing the chemical here to continue selling it abroad.

## Nongame checkoff checkmated

**Madison** — The "Nongame Checkoff" bill has been defeated in the state Senate. It would have allowed Wisconsin taxpayers to voluntarily donate a few dollars of their state income tax refund to endangered and nongame wildlife protection.

Seventeen states have now adopted such a system. Last year, neighboring Minnesota residents donated more than \$520,000 to protect their nongame wildlife. This year,

Minnesota officials expect income to be even higher.

All federal help for state endangered species programs was cut off last fall. However, the Reagan administration is on record in favor of nongame checkoffs as a way to encourage private rather than government spending.

The measure is expected to come before Wisconsin lawmakers again next year.

## Seen any rare birds lately?

DNR welcomes observation reports on any plants or animals on Wisconsin's endangered and threatened species list, especially those listed below. Nesting or breeding records are particularly needed. The reports help identify the status and needs of the state's rarest wildlife populations.

To report sightings, state the species, number of young or

adults, and location. Include your name and address. Send reports to:

Office of Endangered and Nongame species  
Department of Natural Resources  
P.O. Box 7921  
Madison, WI 53707  
(608) 267-7507

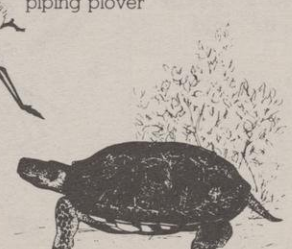
### mammals

pine marten ▶



### birds

barn owl  
Bewick's wren  
common loon  
Cooper's hawk  
▶ great egret  
great gray owl  
loggerhead shrike  
red-necked grebe ▶  
red-shouldered hawk  
piping plover



### amphibians

cricket frog

### reptiles

Blanding's turtle  
massasauga  
slender glass lizard  
▶ wood turtle





Last month, Rollie Nesbit, DNR wildlife manager at Eau Claire, received a call about stray pelicans at Crystal Lake Park here.

Pelicans?

White pelicans normally winter on the Pacific and Gulf coasts as far south as Panama. Some stop over in the Dakotas on their spring migration to west-central Canada. Occasionally a few trickle into western Minnesota, but they're rare visitors here in Wisconsin.

But they liked it here in April and birdwatchers in the area had a field day.

## Fish and wildlife a \$40 billion business

**Washington, D.C.** — One out of every two adult Americans participate in some form of outdoor activity involving fish and wildlife, a national survey by the Interior Department's US Fish and Wildlife Service reveals.

Nearly 100 million people engage in one or more forms of wildlife-related recreation and spend almost \$40 billion to pursue their favorite sport or other outdoor hobbies.

Included in this total are more than 42 million Americans age 16 and older who fish and 17 million adults who hunt.

Eighty-three million Americans observe or photograph wildlife

during outings or attract birds and other wildlife to their homes. Over 30 million of these people also fish and hunt.

### The typical adult

**American sportsman who fishes or hunts is likely to be male (71%), white (92%), under age 35 (52%), earn under \$30,000 (71%), and live in a rural area or town under 50,000 population (76%).**

The survey covered 116,000 households by telephone for general information and included personal interviews of 35,000 people to gather details on participation and expenditures.

## Acid rain hits fish last

**Rhinelanders** — A DNR researcher says long before fish are hurt by acid rain, many other less-noticed aquatic organisms may disappear from northern lakes.

Fish and amphibians are relatively tolerant to acid build-up, says DNR limnologist Joseph Eilers. They can withstand water as acid as pH 4.3 and 4.8, respectively. Some other organisms are far more susceptible, according to Eilers.

**"The least tolerant to acid are leeches and molluscs, with individual species rarely found below a pH of 5.7," he says.**

**Most aquatic insects can tolerate only pH 6.0. Algae, crustaceans and sponges disappear below 5.5 and rotifers below 5.1. (A pH of 7.0 is neutral — neither acidic nor basic. A healthy, productive lake will measure around pH 6.0 and an acid lake below 5.0 or 5.5.)**

Although he cautions against making cause-and-effect conclusions, Eilers says that long before economically important game fish are lost to acid rain, profound changes will already have taken place in a lake.

## 68,000 deer quota proposed Other fish and game rule changes

**Madison** — In spite of the severe winter in parts of the north, Wisconsin's deer populations remain high and DNR is proposing a 1982 quota for this fall of 68,000 animals. This is an 8.5% increase over the number taken last year. **In general, quotas in the central part of northern Wisconsin are reduced and increased elsewhere.**

Figures are tentative and may be adjusted as further facts come in. The 68,000 proposal will be presented to the State Conservation Congress meeting in Green Bay June 3, 4 and 5. It has already been reviewed at county sessions. Other items up for Congress action include proposals to:

**Increase the minimum size limit for muskies from 30 to 32 inches;**

Extend the whitefish and cisco netting season from Jan. 25 to Feb. 1;

**Prohibit the sale and transportation of live crayfish for bait and prohibit fishing with live crayfish in inland waters;**

Extend the time period in which minnow traps must be lifted from 24 to 48 hours;

Permit charter boat fishing from 2 hours before sunrise to 2 hours after sunset—which would conform with private boats;

Open the muskie season on the Saturday nearest Memorial Day instead of the first Saturday in May;

**Eliminate the split duck season in the northern part of the state;**

Change opening date for ruffed grouse from the Saturday nearest Oct. 1 to the Saturday nearest Sept. 15;

Legalize the use of snares for underwater sets in the beaver-otter season;

**Require a carcass tag for bear;**

Eliminate certain duck and goose decoy placement restrictions;

Close the season for sharp-tailed grouse for five years in Langlade, Marinette and Florence counties;

Open the coyote trapping season on the Saturday nearest Oct. 15 instead of the Saturday nearest Nov. 1;

**Liberalize beaver trapping regulations for an increased harvest;**

Change the present deer management unit boundary lines to county lines;

Permit the netting of spawning chinook or coho salmon as an alternative to snagging;

Place certain restrictions on the taking of large and smallmouth bass.



## Coming attractions . . .

- \*\*\*Special 40-page supplement on endangered plants coming in July-August.
- Other articles scheduled soon:
- \*\*\*Whitewater canoeing in Wisconsin.
- \*\*\*Horse endurance competition in the Kettle Moraine State Forest.
- \*\*\*Migration of Wisconsin birds.
- \*\*\*Mississippi Flyway canvasbacks.



# Newport State Park



Newport was still thriving when this photo was taken. In 1885 its school had 27 pupils.

Photo courtesy of the Wisconsin State Historical Society

**There is a certain irony to the fact that Wisconsin's only formally designated wilderness park was once a bustling village that had designs on destiny. Now it is pure solitude.**

*ROBIN J. IRWIN, Editorial Assistant*

The 2,000 acres that make up Newport State Park stretch along nine miles of Lake Michigan shoreline. Newport started as a lumber town and then died. Its story is the story of Hans Johnson. When he arrived Johnson must have thought the tip of Door County was the land of his dreams. In the 1870's it was similar enough to his Danish homeland — northern, pine-covered and coastal, to make the bearded, 25-year-old immigrant feel comfortable. Land in Denmark was rocky, infertile and expensive. There was too little to go around when the tiny Scandinavian country's population exploded on the eve of Europe's industrial revolution.

So Hans Johnson had left Denmark and headed for America. Here, land was nearly free for the asking, or at least for the homesteading. A man could make something of himself.

Door County also felt right because Johnson was a Scandinavian in a land peopled with Scandinavians. The Norwegians had led the way, founding Ephraim in 1825. The Swedes came next around 1850, and the first of Johnson's Danish countrymen began trickling into the peninsula about 1860. Johnson himself reached Rowley's Bay in 1871, just about the time a few rugged Icelanders were beginning to settle on Washington Island. They in turn would be followed by Finns toward the turn of the century.

Said to be over six-foot-four, Johnson was a big man even among Scandinavians, a man to whom hard work came easy and natural. And those first years, the work was hard. Following the profession of his forbearers, Johnson farmed near Rowley's Bay. Soon he was spending winters cutting timber and

before long worked his way up to foreman.

But Hans Johnson hadn't come to America to labor for someone else's benefit. As he worked he also saved until, in 1879, he had enough to buy 2,000 acres of good pine, poplar and birch timberland north of Rowley's Bay, almost at the very tip-top of the Door Peninsula.

In that age of expansion, vision and a strong back helped Hans Johnson get ahead. By 1882, the *Door County Advocate* reported that he had seven teams of horses and 25 men working for him. He paid them \$1.25 to \$1.50 for every cord they cut.

All winter they cut "brickyard wood" and stacked it on shore to await shipment. A three-day journey by sail or steamship delivered it to Milwaukee. There it was used as fuel to produce the off-white brick that would give the town its nickname, "Cream City."

In spring, schooners raced the retreating ice into port, each vying to take on the first load. If they could



reach Milwaukee ahead of the others they'd reap a premium price for the cargo. Sometimes ship captains went to great lengths to be first at the dock. One enterprising skipper developed the trick of raising his movable centerboard keel and slipping over the top of Newport Bay's reef to get ahead of the others.

If spring competition was fierce, sometimes the temptation to make just one more run before winter was equally compelling. In late November, 1881, two Great Lakes scows, the *Becker* and the *Forrest* came racing each other into the bay, all sails flying. Each wanted to load first, get out of Newport and back to safe harbor in Milwaukee. Neither made it. Unable to stop, they collided at Johnson's pier and were totally destroyed. Their cargoes of hay and salt pork were ruined, and the dock itself sustained \$500 damage.

The following spring Johnson rebuilt the pier, better than ever. Its thick, rough-sawn planking connected a series of logwork cribs that stretched hundreds of feet out into Lake Michigan. The cribs were 10 or 12 feet square, built of stacked logs floated out into the lake and filled with stones.

But Johnson, not content with just a big pier or a small lumber empire, set about building and running an entire town. He erected a general store and set up a post office there in 1882, built a fine big house, a colossal horse barn and a sawmill. And as Johnson's personal business empire grew, more and more houses sprang up in Newport. A Chicagoan named J.H. Matthews started a "juice mill" to distill cedar oil for making furniture polish. A widow opened a boarding house for lumberjacks and millworkers.

Newport's and Johnson's fortunes soared. By the winter of 1885, 3,000 cords of firewood were banked up on the shores of Newport Bay, along with 1,500 pine posts, 2,000 cedar posts, 5,000 hemlock railroad ties and 100 cords of barrel bolts, presumably bound for Milwaukee's coopers.

Those were the good years for Johnson and his town; people began calling him "governor." Those who knew him then say he was a pleasant man, a man who cared about the future of the town he built and the people who lived in it. One Fourth of July he brought in rockets and pinwheels and put on the first fireworks display ever seen by anyone in the region. He built the town's first school to educate the workers' children. (Truancy must have been a perennial problem. On February 12, 1885, at the height of the logging season, the *Advocate* reported that there were "27 children enrolled in the school, 15 attending.")

Perhaps it shouldn't surprise that Johnson's fortunes eventually took a turn. In 1877 his young wife Anna died. There are no records to indicate how the loss affected him immediately. History doesn't often record such things as personal grief. Outwardly, his meteoric climb to the good life in this good land continued unabated. He was Newport's Justice of the Peace and the year following Anna's death was elected to the state assembly. But somewhere about this time, a seed was sown — a seed that would ultimately bring down all he had built. Sometime around 1890, Hans Johnson began drinking heavily.

Peter Knudsen, a former lighthouse keeper who worked for Johnson, began to play a larger and larger role in running the business. By 1894, Johnson must already have been slipping badly. Business was poor and the market for cordwood glutted, but it was Knudsen, not Johnson, who traveled to Milwaukee to drum up sales. He was able to obtain contracts for only 1,000 cords of brickyard wood at the low price of \$1.50 a cord and that was a delivered price to the dock in Milwaukee.

Early in 1895, Johnson gave in entirely, sold his Newport land and businesses to Knudsen and moved to Charlevoix in Michigan's Upper Peninsula. But within two years he was back, money from the sale of his property presumably gone. He took a job driving team for Knudsen, his former employee.

Despite his slip in status, Johnson was still highly regarded in Newport. He was elected town assessor in 1898 and town treasurer after that. But a 1905 issue of the *Advocate* reports that the Newport's treasury was empty, the village treasurer having drunk up all the town's funds.

Sometime after that, Johnson disappeared from sight and history. One longtime local resident claimed that he died somewhere in the Upper Peninsula, a penniless alcoholic.

With Johnson gone, the town's fortunes paralleled its founder's. Timber was running out by the turn of the century, and Peter Knudsen was not the businessman Johnson had been. He had some of the same entrepreneur's hopes and dreams, but not the same opportunity or ability. Cheap, transportable coal became more readily available and, by 1905, cordwood cutting ceased at Newport. The population dwindled.

Knudsen tried to breathe new life into the dying community, but he was never quite able to pull it off. He was heartened for a while in 1913 when a group of Minneapolis investors talked of running a

Duck Bay at Newport State Park.  
Photo by Charles "Bud" Gourlie







One of the 17 isolated wilderness campsites at Newport.

Photo by Charles "Bud" Gourlie

railroad from Sturgeon Bay to Newport. With great hoopla, they advertised the company, sold stock, surveyed a route and bought land at Newport. In all, they sold about \$75,000 worth of stock, and it looked as though the project would actually materialize.

But history doomed the railroad as it did Newport. The US entered World War I, the money market tightened and the exploit folded. All shareholders were eventually repaid, but the promoters lost their shirts on the deal and Newport lost its lease on life.

Knudsen had thought he could capitalize on the coming of the railroad. In 1914 he recorded a town plat for his acreage at Newport. He neatly subdivided the shore of the bay into a horse-shoe-shaped layout of 751 lots, intersected by nearly 20 streets. Despite this effort the new Newport never happened. No one wanted to live in a town with little reason for continued existence. A year later, in 1915, he vacated the plat to avoid hefty real estate taxes on the residential land. Newport reverted to its original description and boundaries.

Four years later Knudsen sold his

2,000 acres at Newport to Ferdinand Hotz, a Chicago diamond broker. Hotz built a summer home, hired a caretaker and rented some of the cabins for a few years. But mostly, for the next 50 years the land remained simply the wealthy family's quiet lakeside retreat.

Slowly, almost all evidence of Newport's heyday as a bustling pier community vanished. Unused, the "big pier" succumbed to wind and wave sometime around 1912 or '13. A smaller one replaced it, but that also eventually gave in. Some of the town's 20 or so original buildings lasted into the '40s and '50s, ragged curtains flapping in the windows, old newspapers rotting on the floors. At last they too crumbled.

In 1965, the Hotz family sold the land to DNR and the site of the former town of Newport became peaceful, secluded Newport State Park. Little evidence remains of the extinct community's long-shot at grandeur nearly 100 years ago. Here and there a lilac bush, an apple tree, a still-producing Concord grapevine or an occasional foundation stone indicate where a house once stood. Out in the bay, on a calm day when the sun is right, you can still see the remains of the

long pier's rock-filled supporting cribs under the water. The open area where the town's buildings stood is now the park's grassy picnic area.

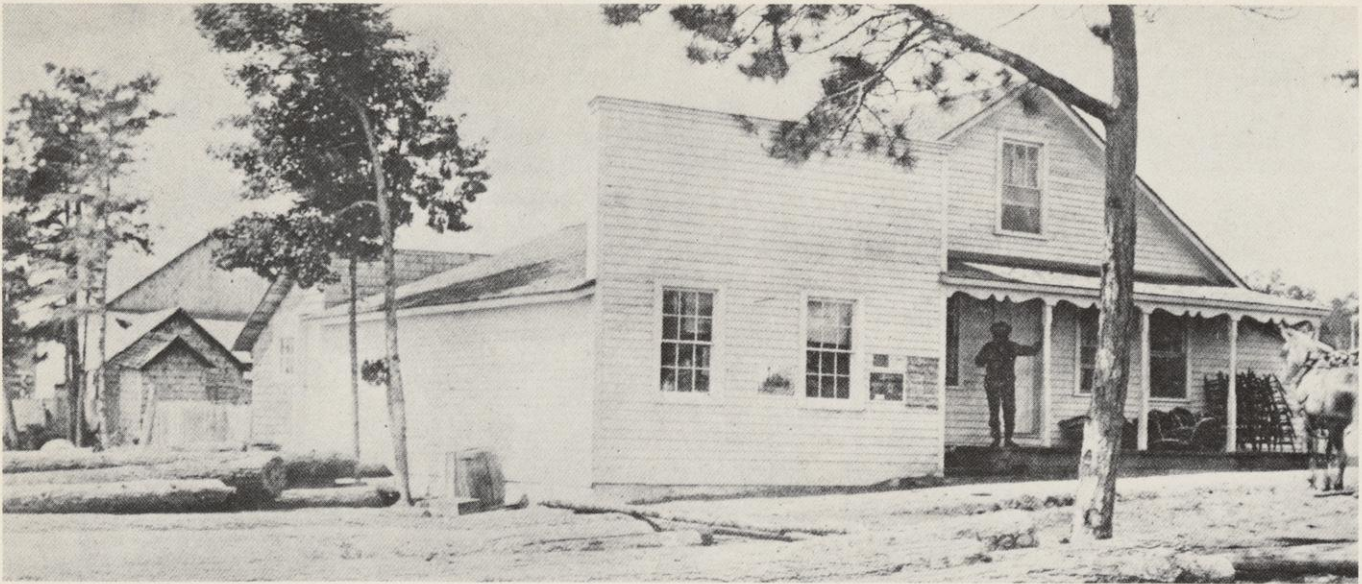
The old logging roads once trod by the massive hooves of workhorses have become a 28-mile interlocking network of hiking and skiing trails. The logged-over land has recovered, and 17 wilderness campsites now nestle beneath the regrown pines. The closest is just under a mile from the parking area.

The long, sweeping shoreline that at one time stored thousands of cords of city-bound firewood now plays host to summer sunbathers. In all, the park encompasses all or part of three bays and more than nine miles of Lake Michigan shoreline.

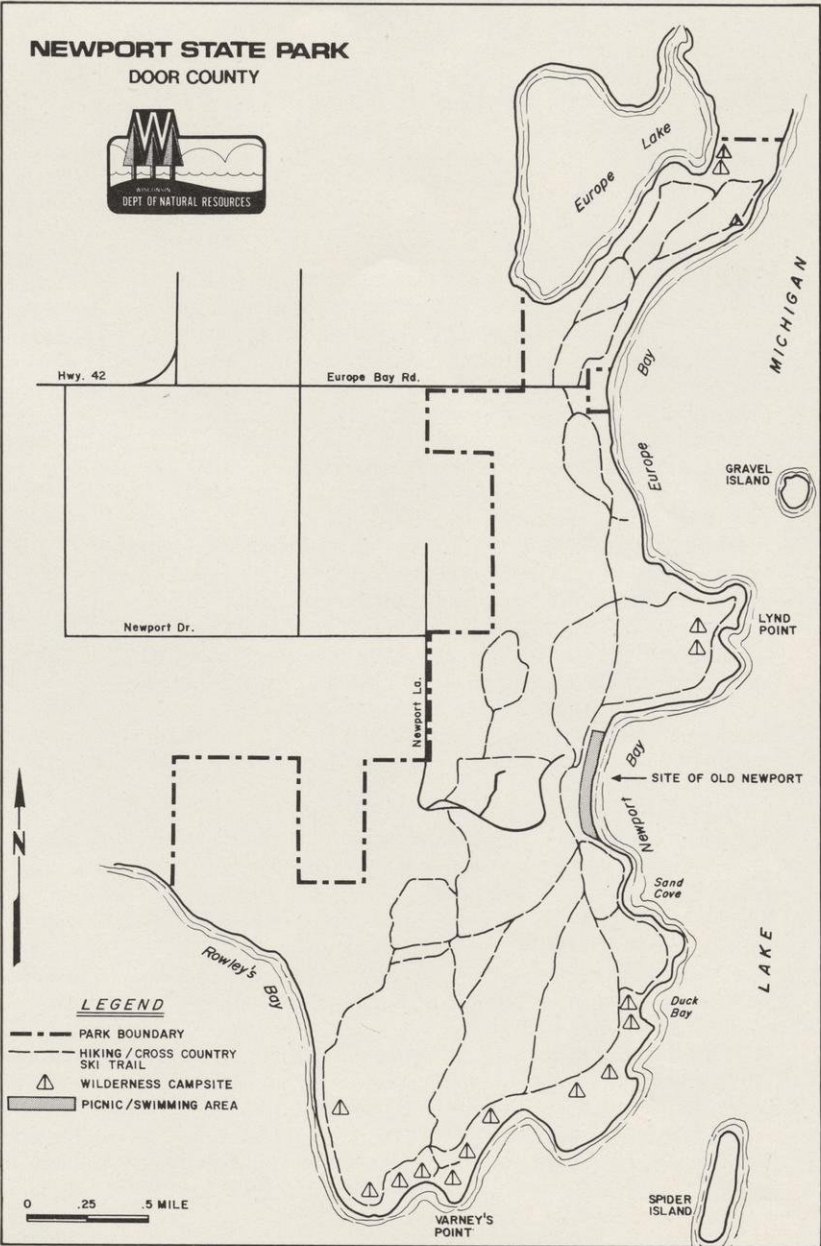
Today, the number of visitors who come each year to discover Newport's regained loveliness outnumber the old town's total population by a good hundredfold. They soon discover that Newport is still a land for dreamers, and that would make old Hans Johnson proud.

Research material for this story was provided by Merlin Lang, Harvey Stahl and Julia Hornbostel.





Taken in 1882, this picture shows Hans Johnson, founder of Newport, standing on the porch of his general store and post office.  
 Photo courtesy of the Wisconsin State Historical Society





# The Readers Write...

I've read newspaper articles about possible prosecution of hunters who falsified applications for "Hunter's Choice" deer hunting permits.

I sincerely hope the DNR follows through and prosecutes those who falsified their applications. It would be fitting and proper — no matter what the cost.

I am trying to raise three young boys to be good sportsmen. One of the boys was tempted to check the box on his application saying that he didn't receive a "Hunter's Choice" deer hunting permit last year when in fact he did receive one. All his friends were going to do that, he said. I told him and the other two why that wasn't fair and explained the purpose of the selection system in general. I believe all three understand now.

Now they also are anxious to see what DNR will do with violators. For their sake, I sincerely hope you follow through on plans to prosecute. It would really enforce my position and that of many other parents who are going through the same education process I am.

I really like the "Hunter's Choice" system. Last year four of us received two "Hunter's Choice" tags. This year none of us received one but we understand. I still like the method and encourage you to continue it.

**NICK NICE, Boscobel**

Not long ago, a friend asked me what I thought of the controversial proposal to allow deer hunting with handguns. Instead of answering him directly, I showed him an article from *The Great Soviet Encyclopedia*. I'm learning Russian as a hobby so, having mislaid my translation, I read it to him, translating haltingly as I went along.

When I reached the part about the use of pistols for hunting big game in 19th century Russia, he interrupted.

"Then there's a long history of this sort of thing?" he said, surprised.

Many people are surprised to learn that handgun hunting has been going on for at least a century or so.

My 1957 edition of the Soviet encyclopedia documents the use of large-caliber pistols for hunting dangerous game in Russia during the 19th century. They were used mainly as back-up weapons against wounded animals, or when the main weapon missed or misfired. They also appear to have been used as primary hunting arms when hunting mounted or with hounds. (I am afraid my Russian fails me here — it is either mounts or hounds but not both.)

The pistols themselves were either center-fire or percussion, ranging in caliber from .45 to .670, the larger sizes being more common. Barrel lengths ran from 5.91 inches to 13.8 inches and they weighed from 3.1 to 3.5 pounds. Double-barreled pistols, either side-by-side or superposed, were the most common, but single-barreled arms were also used. Metallic-cartridge firearms were similar to common break-open shotguns. Most appear to have been made in France.

The earliest of these hunting pistols dates to about 1570 with many "hunting sets" dating to the 18th and 19th centuries. These hunting arms were manufactured in France, Germany and Russia.

All this may be a trifle exotic for Wisconsin, but it does provide impartial and scholarly documentation of the use of pistols for hunting over many centuries.

**NORMAN I. WHISLER, Madison**

A year ago last summer, I attended a hunter ethics conference at Stevens Point. Hunter education was strongly supported as the answer to a wide range of hunting abuses, but after the conference all was forgotten. Since then, hunter ethics has been pushed aside. Let's get on with hunter education before it's too late. It's that simple.

**AL KRZYKOWSKI, Wisconsin Rapids**

The first cool and rainy day ushering in the winter season here in California seemed a good time to go back over 1981 issues of *Wisconsin Natural Resources Magazine* to see what I might have missed.

The "Escape to Wisconsin" issue brought back great memories. Through it, I relived 40 years of hunting and fishing in the state.

Once again I was fishing muskies on the Chippewa Flowage, walleyes on North Twin Lake and northerns on Lake Mendota. I closed my eyes and bagged two grouse on a windswept hill near Sauk City, missed a shot at a huge drake mallard on Mud Lake near Poynette and watched the Canada geese fly back to the river at Pine Island.

Each year I return to Wisconsin once or twice, to test my hunting and fishing skills and visit old stamping grounds. I enjoy the colorama of fall while fishing walleyes on a northern lake, the smell of fresh stands of pine in grouse country. The awesome spell cast by nature is an almost unbelievable palette of colors just before winter casts its shroud over the countryside.

Each year, my son-in-law renews my subscription to your magazine as a birthday gift. What more could a man ask for his birthday?

**WILLIAM A. MCGILLIGAN, San Clemente, CA**

Some years back I read somewhere that Wisconsin had more than 9,900 named lakes of 10 acres or more. More recently I read in your magazine that Wisconsin had some 14,900 or more lakes of unspecified size and definition. What's the correct score?

**FRANKLIN G. POOL, Milwaukee**

*Wisconsin has more than 14,900 lakes, 10 acres or larger in size, of which 9,900 are named. That's as near as anyone can tell. Many small, shallow lakes come and go with dry years and wet ones.*

I wonder how many of your readers have complained about the hunter's choice permit for hunting deer? I saw a letter in another magazine registering the same feeling I have — disgust — with the system. I read that DNR has detected or presumed that some people cheated on the application, but I see no news about the apprehension of these violators. The cheaters realize they can probably get away with it; that their chances of getting caught are low.

I applied for a permit two years in a row and didn't receive one. I'm certain other hunters did the same and feel as I do. If the system has so many holes in it, drop it, and come up with something better and enforceable! I hear rumors of individuals that have received permits both years.

I think a better system could be instituted to give everyone a fairer chance in this lottery.

**RICHARD RISTOW, Hazelhurst**



We have always considered the Woodland Tax Law a valuable tool for wildlife. After reading "I Felt I Was Destroying It" (January-February '82) we are thankful for those who have stayed out of the Woodland Tax Law.

Maybe these individuals have allowed at least some old mature trees and perhaps even standing dead timber to remain in their woodlot. Woodpeckers, cavity-nesting birds and many small mammals do not appreciate "a young, healthy and vigorous woodlot." We need all kinds of habitats to maintain diversity in nature.

**BILL AND NORMA ALLEN, Junction City**

I am writing to support you where others criticize you. The letter in your November-December '81 issue attacking support for timber wolves was infuriating, unjustified and irresponsible.

Wolves should be protected, studied and appreciated. These animals cause no threat to the deer herd or, most of all, to us. Since Wisconsin is not just a hunting ground, but also an outdoor wonderland, we should support all species of game and nongame animals. I, for one, would gladly give up my hunting privileges to help timber wolves survive. I just pray that the attitude exhibited in that letter is held by only a small minority.

**MARK THEESFELD, Towan**

I was surprised to find that your recent special supplement articles on the "Upper Mississippi River Master Plan" (September-October and November-December 1981) don't mention the impact of increased river traffic on cultural resources.

Since the construction of locks and dams in the 1930's, several known archaeological sites, prehistoric Indian mounds and habitation sites have been destroyed or inundated. Within recent years, many other sites have been obliterated as a result of dredging, fluctuating water levels, and vandalism.

Erosion along river banks and islands is the most destructive force affecting sites in the region today. Natural wave action, augmented by commercial and recreational navigation, are destroying many sites each year.

Professional archaeologists from Wisconsin, Minnesota, Illinois, Iowa and Missouri recently completed a study of the destruction of archaeological sites along the Upper Mississippi River and its tributaries. The study recommends ways to protect and preserve these irreplaceable resources.

Hopefully, appropriate state and federal agencies will implement these recommendations before it's too late and additional sites are lost forever.

**ROBERT P. FAY, Archaeologist, Madison**

My compliments on your Public Intervenor article (January-February '82). The office is much misunderstood; its value underestimated.

Here in the Central Sands region, many acres are planted to potatoes, beans and peas. As a result there is a great deal of aerial pesticide spraying.

In March, 1978, a group of area citizens complained to the Public Intervenor's Advisory Committee about overspray, drift and frequent low flights over homes, farms, roads and gardens. The atmosphere between these citizens

and the pesticide users was mistrustful, hostile, polarized and explosive. The citizens sought help through the Public Intervenor's office because no one at the local level had the authority to deal with the situation. Once the Public Intervenor got involved, dialogue was established, tensions eased and pesticide use and control regulations revised. (Their final approval awaits the outcome of a Citizens for a Better Environment lawsuit requesting an Environmental Impact Statement.)

Natural resources belong to us all, but most do not have the means to wage long and expensive battles to assure their protection. The Legislature proved itself farsighted when it created the Office of the Public Intervenor.

**JUANITA MARTINSON, Nekoosa**

Readers are invited to express opinions on published articles. Letters will be edited for clarity and conciseness and published at the discretion of the magazine. Please include name and address. Excerpts may be used in some instances. Letters to "The Readers Write" should be addressed to Wisconsin Natural Resources magazine, Box 7921, Madison, Wisconsin 53707.

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#### Cover:

Ribbons of dirty runoff from a thousand nonpoint sources still pollute Wisconsin streams and lakes. For an in-depth look at why the clean water job is still only half done, see the special supplement at page 14.

Design by artist Scott Zupanc, Rt. 1, Arena, WI 53503

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### Wisconsin Natural Resources

May-June 1982 • Volume 6, Number 3

Wisconsin Natural Resources is an official bi-monthly publication of the Wisconsin Department of Natural Resources, 101 S. Webster St., Madison, Wisconsin 53702. The magazine is sustained through paid subscriptions. No tax monies or license monies are used.

Subscription rates are: \$6.97 per year, \$11.97 for two years and \$15.97 for three years. Single copies \$1.50. Notification of address changes must include mailing label and new address. Allow six weeks. Send subscription information requests to: Wisconsin Natural Resources, P.O. Box 7191, Madison, Wisconsin 53707.

Second-class postage paid at Madison, Wisconsin

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# The bluebird of happiness is sad

**Indians say bluebirds are the Great Spirit's harbinger of spring, made of blue sky, red earth and the remnants of snow left over from winter. Where have they all gone?**

*DOROTHY GESSERT, Brodhead*

A few years ago when my husband Bob and I selected the site for our new farm home, we chose an open area on the crest of a hill. From it we can look out across the spreading countryside and see Brodhead nestled on "Sand Prairie" beside the Sugar River. Our yard lies between two woodlots about 30 rods apart, with a hedgerow of brush and trees connecting them. Friends advised us to grub out that hedgerow to get rid of the poison ivy which grows there and creeps onto the lawn and into the flower beds. But it attracted wildlife, so we kept it.

We also kept two dead trees there. They have a dignity not diminished by death but merely changed in character. Many birds nest in their hollow trunks or in the holes cut by woodpeckers and use the stark, high branches as vantage points.

We faced the front of the house toward the hedgerow and one of our rewards was bluebirds.

No one can help loving bluebirds. Plymouth Rock colonists, called them "blue robins." Thoreau said the bluebird "carries the sky on its back."

When early settlers cleared fields and built split-rail fences, bluebirds prospered because of the abundance of open habitat and knot-hole nesting sites. Later they found plenty of insects and homes in the limbs of mature, unsprayed apple orchards. People came to think of



Bluebird eggs in an artificial nesting cavity.

Photo by Vince Bauldry

them as a symbol of happiness, a sign that all was right with the world.

But things changed, and the bluebird does not fare so well now. Fields grew larger and woodlots smaller. Demand for firewood increased and standing dead trees were cut. Pesticides became common and far more deadly. Knotty wooden fenceposts gave way to painted steel ones, or to a bare strand of electric wire strung on a rod. Unkempt old orchards yielded to more productive, carefully pruned, genetically dwarfed trees.

The little room left for bluebirds in this changed scheme of things had to be shared with a couple of exotic newcomers — the European starling and the English sparrow. Starlings ate the same food and sparrows used the same nesting cavities. In time, the bluebird became much more scarce in rural

Pair of bluebirds.

Painting by Artist David Mohrhardt, 314 North Bluff, Berrien Springs, MI 49103

areas, a rare treat instead of a daily occurrence.

So we felt uncommonly lucky when each spring we heard bluebirds and occasionally saw one perched on a powerline near the house. We invited them to move closer, but they rejected the numerous houses we provided on the side of tree trunks.

Nonetheless, late each July or early August there'd be bluebirds feeding their young and coaxing them to fly in our back yard. With binoculars and a shady vantage point, I could spy on the fledglings (usually five) as they tested their wings and practiced catching grasshoppers. With heat waves rising from the newly harvested alfalfa field, the young birds would drop to forage for insects and return to the powerline, mimicking the hunched posture of adults and trying to look grownup.

Year after year we enjoyed the birds, but never knew where they nested. Not until a winter wind toppled a dead hedgerow oak did we discover where the birds had been raising their brood.

The next spring the bluebirds arrived as usual. Their hollow tree gone, they apparently house-hunted the entire neighborhood before deciding where to build their nest. Although we saw the first bluebird in our yard in April, it wasn't until June first they began nest-building in a hollow-log birdhouse we had erected on the grape arbor. But once they picked the spot, the pair worked tirelessly and finished the nest in only four days. It was made of woven grass with a few feathers and hair.

Our grape arbor is flanked with raspberries on one side, asparagus on the other and is near the strawberry patch, garden and clothesline. From our kitchen window, 70 feet away, we







watched through binoculars, literally looking the bluebirds in the eye, identifying insects in their beaks.

Sometimes they were heckled. Other birds tried competing for the nesting place; a few came for the sheer pleasure of causing a disturbance, even after they had established their own nest elsewhere. Crested flycatchers, house sparrows, blue jays and kingbirds caused problems. Redwing blackbirds and a song sparrow that liked to perch and sing on their housetop riled the unobtrusive bluebirds most of all.

We watched as we worked in the garden and yard and as we made coffee at daybreak. On cool mornings, the thermometer would register 40 degrees when the birds emerged from the house and flew to the powerline overhead. Often both shared the house, the male sitting in the knothole doorway as the female incubated the clutch of eggs.

One day a blue jay alighted on the flat birdhouse roof. The feisty male bluebird appeared out of nowhere and flew at the much larger jay. It was amusing to see the bullying jay rear into the air in the nick of time and the bluebird swoop underneath. The chastened jay left the area without delay.

On June 23 the young emerged from the eggs. No expectant human father could be more restless and excited than was that male bluebird when his eggs were about to hatch. He perched atop the house, listening and restlessly shifting about, periodically peering into the house, remaining close to the nest, and just generally acting nervous.

When the eggs hatched at last, both parents carried food to the youngsters from the first traces of daylight until dark. Even in sweltering heat they hunted tirelessly.

Nothing ever daunted them for long. Even fluttering clothes on the clothesline didn't disturb them. I could pick berries and work in the garden very near the nest and my presence was soon accepted.

Six days after the young hatched, a traumatic event for us all happened. I'd finished the morning chores and was washing breakfast dishes, preparing to leave for my part-time job at the local newspaper. Suddenly there were birds swooping all around the bluebird house, squawking in fright. The male bluebird was among them but silent.

In horror I saw the cause of the ruckus. Our own beloved Mrs. Pussycat, a stray who adopted us a couple years ago, was sitting on the grape arbor, one furry gray paw extended to the shoulder into the birdhouse. I screamed at her through the open kitchen window and she innocently retracted the offending appendage with a guiltless "Who me?" look.

Dish towel in hand, I tore out of the house and swatted at the cat. She jumped down, cowered on the lawn and tried to act wrongly accused. After a brisk scolding she was banished to the garage. Mrs. Pussycat had been fed just minutes earlier and half the food remained uneaten in her dish. She raided the nest not out of hunger, but from natural hunting instinct.

Back at the kitchen window I watched nervously. When I'd appeared on the scene, the birds circling the cat flew away. Now only the bluebirds hovered and fluttered near the nest. For about 15 minutes, they sat on the housetop or the electric line, not entering the house. The male left for a moment, and returned with an insect in his beak. He roosted near the house a few times and finally went inside. Almost immediately, he came back out with the insect still in his beak!

My heart sank! "Are they dead?" I wondered.



The author's yard and the log bluebird house.  
Photo by Dean Tvedt

He flew to the female on the powerline overhead and gave her the insect. She held it a few moments, then flew to the birdhouse and went in. When she came back out she no longer had the insect.

Evidently some of the young were still alive. The female rejoined the male on the powerline. Both sat there a minute. Then he dropped to the lawn, picked up another insect and flew with it to the birdhouse. He sat on top a brief time before taking it inside. Apparently he'd decided the coast was now clear.

Soon a starling that earlier had been fussing at the cat came back and harassed the bluebirds briefly. The song sparrow nesting in the raspberries returned to his post on the grape arbor,

singing merrily, seemingly over his fright. Life had returned to normal.

Day after day we watched the parents carry food. Sometimes both adults landed on the powerline, juicy green worm in beak, like airplanes waiting for clearance to land. Sometimes it was 10 minutes before they entered the house to deliver food and other times they went in immediately. Often the female calmly beat her prey to death against the roof of the house before carrying it inside. On leaving, the bluebird parents carried away large gobs of fecal matter in their beaks, releasing the droppings halfway across the field. There is no whitewash below a bluebird nest.

One beautiful sunny Sunday — 15 days after the young hatched, and only nine days after their harrowing experience with Mrs. Pussycat — the young bluebirds first tried their wings.

It started with an unusual amount of chirping by the adults. Unlike many



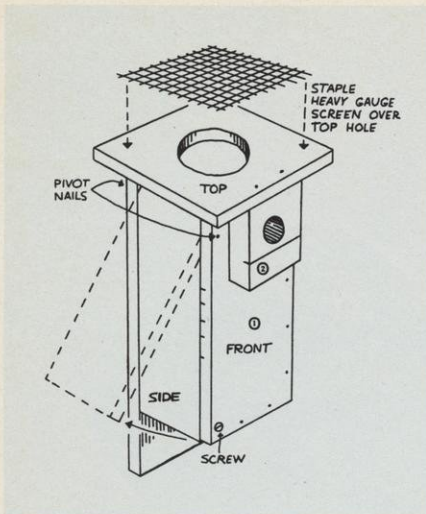
The knotty fenceposts where bluebirds once nested have been replaced by treated posts like this, or by steel.

Photo by Gordon Kratzat, Wisconsin Society for Ornithology

other species, baby bluebirds make no sound when their parents approach and adults greet each other with only a subdued "chee-chee" or "chur-wi." By comparison, this day they were making a virtual racket and I soon discovered the reason. Looking out through the dining room window, I found myself face-to-face with a dull, sparrowish-looking fledgling whose tail flashed a pale cast of blue. It had flown from the birdhouse to the narrow window ledge, and clung there as if glued. Then the young bird flapped awkwardly toward the apple orchard, and rested briefly in a tree there before chancing the long journey to a big walnut at the edge of the lawn.

Never far away, the adults sat on the





Main feature of Vince Bauldry's new bluebird box design is the open top covered with hardware cloth. This topless feature eliminates competing cavity nesters like sparrows who don't like to get a wet head. It also helps the nest dry out after a rain and seems to increase hatching success.

## Materials & Instructions

**TOP:** -7" x 8" x 3/4"  
Hole-3 1/2" diameter, located 2" from back edge  
Screen—Approximately 5 1/2" square held down with staples, eight 1/2" staples

**FRONT:** -① 5 1/2" x 14" x 3/4"  
② 3 1/2" x 4 1/2" x 1 1/2"  
Hole-1 1/2" diameter, located 1 1/4" down from top edge of ② on center  
Saw—Saw across 1/8" deep, 1/2" below hole. Also, 5 saw kerfs on inside.

**SIDES-2:** -4" x 14" x 3/4"  
Locate one side approximately 1/8" lower than other and nail only at top. Screw will be used to keep bottom closed and is "clean out" house lock.

**BOTTOM:** -4" x 4" x 3/4"  
Nail 3 sides  
2 dozen nails, 1 1/4" are needed.

**BACK:** -5 1/2" x 18" x 3/4"



Getting ready to enter the author's nestbox.

Photo by Dean Tvedt

Back Cover: Bluebird family by Artist Don Balke, Rt. 1, Box 351, Nebo, NC 28761 © 1982

powerline, talking in bluebird, encouraging their offspring.

It was now safe to release Mrs. Pussycat from her prison in the garage. She went directly to the machine shed, one of her usual haunts, and returned in a few minutes with a half-alive mouse. As I sat at the picnic table watching the fledglings, she laid the mouse at my feet as if to say "I'm sorry, I'll catch mice from now on."

When it was empty, Bob elevated the birdhouse on a steel pole, further out of Mrs. Pussycat's reach. Despite the fact that they seldom used it, the adults continued to drive sparrows away from the birdhouse. Gradually, the speckled breasts of the young turned rusty red, and by the end of the summer their mousy gray backs took on some of the bright blue of adulthood.

The family group roamed the neighborhood, sometimes spending the night in the birdhouse. On cool fall mornings they'd emerge at dawn and sit on the top or cling to the sides until warmed by the morning sun.

In late October they left. But in spring a pair returned and we've watched them and logged their activities each season since. Almost every year, we've evicted starlings and sparrows to keep them from nesting in the birdhouse before the bluebirds arrive.

Last year a great-crested flycatcher and a wren fought over the house. We wished to keep them both, so we put up more birdhouses. Wrens occupied two of them and a chick-a-dee built a nest in another. A few days later a male bluebird we'd spotted earlier returned with his mate. Our log says that on May 27 the pair began removing the chick-a-dee's nesting material. The chick-a-dee left without a fight.

After competition with sparrows, starlings, flycatchers, wrens, chick-a-dees and a flicker that began drumming on their house, the bluebirds finally settled down and raised two young. In previous years there were always five.

The male bird moulted at the end of July, about the time a second clutch of eggs was due to hatch. When we didn't see him for awhile, we noticed the female bluebird hanging around, acting somber — for all the world like someone in mourning. We looked in the house and found a lone egg, apparently infertile. Sadly, we never saw the male bird again. The mother and the two juveniles left in late October with a flock of migrant bluebirds that stopped to drink from our birdbath.

This spring we'll put up still more houses to accommodate all our competing birds. And we'll be casting our eye upward, shading them from the sun, looking for the brightly colored little bird that puts even the sky to shame. ☐



